# NeSS Data Exchange

# Quick Start

## February 2010

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# 1. Introduction

NeSS Data Exchange (NDE) is a free web service which lets you run queries against the Neighbourhood Statistics database. This database contains more than 300 datasets covering a variety of social statistics, held for a number of different geographic areas. It possible to mix, match and compare these statistics by Area and over time. The database also contains useful geographic information.

NDE is a complementary service to the web site, and the two share a common database and common components enabling the user to select, extract and visualise data.

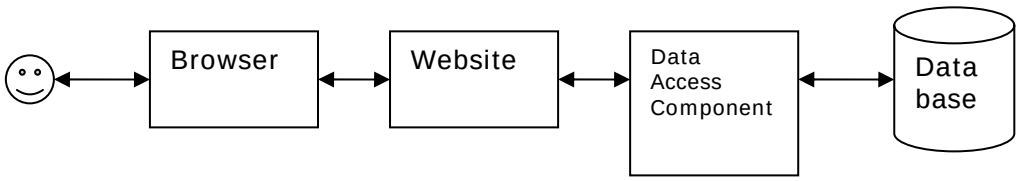


Fig. 1 Website

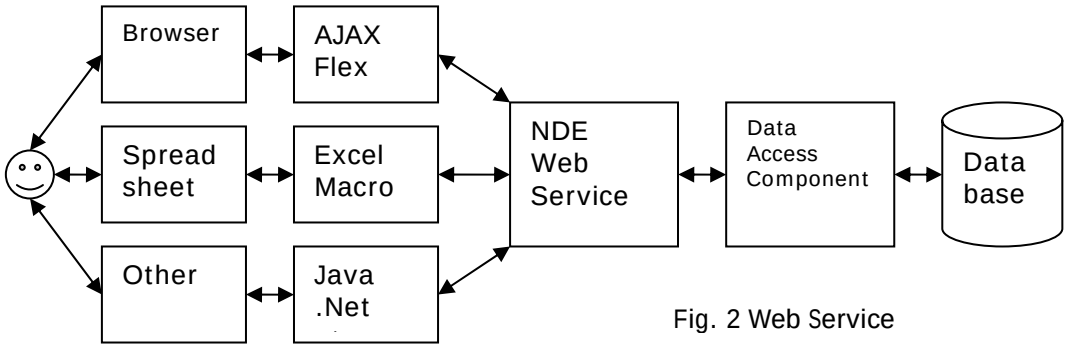


Fig. 2 Web Service

*The two diagrams above compare a website with a web service.*

*Figure 1 shows how the user accesses the NeSS website via his web browser. He can only view or download data using the screens programmed into the website.*

*Figure 2 shows how the web service adds both flexibility and automation to the processes. The web service layer allows applications written by the user to run the same data access components that the NeSS website uses, by means of simple operations.*

NDE2 supports access via both SOAP and REST protocols, both running without authentication. The previous version of NDE (1.2) is still working but this is SOAP only and does require a username and password in the SOAP header.

The REST version is not strictly a RESTful service, rather it allows you to call NDE's operations via a simple URI, making it more suitable for modern and lightweight development platforms.

NDE offers a large selection of operations which can be used to construct an application. These applications are divided into "core" and "advanced" and are described in this manual (with further details in the Technical Implementation Guide).

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The operations are also divided into “discovery” and “delivery” operations, spread over two endpoint URLs. Discovery’ operations ask questions of the database, such as:

- ‘What are the child areas of Fareham local authority (LA)?’
- ‘Which Datasets hold data for Fareham LA?’
- ‘Which variables comprise dataset 57?’
- ‘Which datasets have been updated since December 2008?’

These all return responses in simple, bespoke XML format which can be serialised into objects when using SOAP, or interpreted in a textual format with REST. In many cases the results of one Delivery query are fed into another operation call. This is sometimes called ‘orchestration’.

Finally, the information from the Discovery calls is used to construct a Delivery request. This can be achieved using two simple operations or a more complex, flexible document-based query.

The response to this query is the data ‘payload’ in LGDX format (SDMX and RDF are also available). See the Technical Implementation Guide for details and sample output. This response will often then be transformed via an XSLT into a table, but it could just as easily be processed and stored on a database - or anything else you want to do with it.

The two main types of application are real time access (‘hunter’) and local data stores (‘gatherer’). NDE is fast enough for real time use - most discovery queries run in well under a second though delivery queries can take up to 10 seconds when approaching the cell limit of 10000. This limit does affect local data store applications in that it means they can only collect data a chunk at a time. Where the data store is for a specific area such as an LA, this won’t usually be a problem. For national data it is better to use the download facility on the NeSS website. It should be noted that this facility currently only gives you loaded data, whereas the web service will give you on-the-fly aggregated data.

NDE no longer requires registration, but you can always get help from NeSS support (BetterInfo@ons.gov.uk) and the NDE Users Google Group (http://groups.google.co.uk/group/ness-data-exchange?hl=en )

# 2. Endpoints

The endpoints are:

Discovery: http://neighbourhood.statistics.gov.uk/NDE2/Disco

Delivery: http://neighbourhood.statistics.gov.uk/NDE2/Deli

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# 3. List of Operations

**Table 1 - Discovery Operations**

| Core | Advanced |
|---|---|
| | GetAreaAtLevel |
| GetAreaChildren | |
| | GetAreaComparators |
| GetAreaDetail | |
| | GetCompatibleSubjects |
| GetDatasetDetail | |
| GetDatasets | GetDatasetFamilies |
| | GetHierarchies |
| | GetHierarchyDetail |
| | GetLevelTypes |
| | GetLevelTypesByHierarchy |
| | GetModifiedDatasetFamilies |
| GetSubjects | |
| GetSubjectDetail | |
| GetSubjectTree | |
| GetVariableDetail | |
| GetVariables | GetVariableFamilies |
| FindAreas | SearchAreaByCode |
| | SearchAreaByNameHierarchy |
| | SearchAreaByNameLevelType |
| | SearchAreaByPostcodeHierarchy |
| | SearchAreaByPostcodeLevelType |
| | SearchSByAByName |
| | SearchSByAByPostcode |
| FindDatasets | SearchDatasetByMetadata |

**Table 2 - Delivery Operations**

| Core | Advanced |
|---|---|
| GetTables | |
| GetChildAreaTables | |
| | GetDataCube |

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# 4. Core Operations

## 4.1 FindAreas([Postcode], [AreaNamePart], [Code], [HierarchyId], [LevelTypeId])

This operation is a composite search operation which combines all the existing area searches. The postcode, area string and SNAC code are separate parameters to avoid parsing complexities. A setting of HierarchyId=0 tells the service to use "Stats by Area" rules to pick hierarchy for level type. One of postcode, area name part and (SNAC) Code must be supplied. All other parameters optional.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?Postcode=PO155RR

*Give me a vertical slice of areas containing PO155RR in the default hierarchy (GPH)*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?Postcode=PO155RR&HierarchyId=4

*Give me a vertical slice of areas containing PO155RR in Hierarchy 4 (2003Admin)*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?Postcode=PO155RR&LevelType=13

*Give me the LAs that PO155RR falls in, for all hierarchies (e.g. 2004 version of Fareham, 2005 version of Fareham etc.)*

http://212.58.231.244/NDE2/Disco/FindAreas?Postcode=PO155RR&LevelType=13&HierarchyId=0

*Give me the LA that PO155RR falls in and use the Stats By Area rule table to decide which hierarchy to use.*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?Postcode=PO155RR&LevelType=13&HierarchyId=17

*Give me the LA that PO155RR falls in and only give me the version for Hierarchy 17.*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?AreaNamePart=avo

*Give me all areas matching the string 'avo' in the GPH (default)*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?AreaNamePart=avo&HierachyId=4

*Give me all areas matching the string 'avo' in 2004Admin*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?AreaNamePart=avo&LevelType=13

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*Give me all areas matching the string 'avo' with level type 13 (LA) regardless of hierarchy*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?AreaNamePart=avo&LevelType=13&HierarchyId=0

*Give me all areas matching the string 'avo' with level type 13 (LA) and use the Stats By Area rule table to choose the hierarchy*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?AreaNamePart=avo&LevelType=13&HierarchyId=17

*Give me all areas matching the string 'avo' with level type 13 (LA) and select only those for hierarchy 17*

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindAreas?Code=24UE&HierarchyId=4

*Give me all areas with the SNAC (External) Code of 24UE (exact match) in the 2004 Admin hierarchy (should return only one area)*

## 4.2 FindDatasets (Metadata)

This operation allows you to perform a text search to find matching datasets. The string is compared to:
- dataset titles
- keywords held against the dataset
- metadata held for the dataset
- the titles of variables belonging to the dataset
- metadata held for variables belonging to the dataset

The results are always dataset families. There is currently no facilitiy to search for variables this way.

This is currently the same as advanced operation SearchDatasetByMetadata.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/FindDatasets?Metadata=GCSE

*Give me all datasets with the word 'GCSE' in the metadata or keyword list or variable title*

## 4.3 GetAreaChildren (AreaId)

This operation allows you to get the lower level areas for a supplied area, regardless of level type. Only those areas immediately below the supplied area are returned. For example, the child areas of a region would be the counties and unitary authorities within that region.

Repeatedly calling this operation allows you drill down through area hierarchies.

This is all you need for a realtime geography selector (hunter) or to build an offline hierarchy (gatherer). The concept is simple too - just get the areas that sit within the one named, one level below (e.g. all the wards in an LA).

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**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetAreaChildren?AreaId=276980

*Give me all areas which are the the immediate child of Fareham LA (GPH) - in this case a list of MSOAs*

## 4.4 GetAreaDetail (AreaId)

This is a simple operation which gives you extra information about an area, by supplying its AreaId. This AreaId is internal to the NeSS datastore and must have been previously obtained via other discovery calls.

In the returned information, the Envelope can be used in a GIS system – it is the four corners of the map of the area MinX:MinY:MaxX:MaxY - these numbers being Ordnance Survey Eastings and Northings. The ExtCode is the standard SNAC code for the area. There may be metadata for the area or nil elements.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetAreaDetail?AreaId=276980

*Give me the attributes of Fareham LA (GPH) - SNAC code, envelope etc*

## 4.5 GetDatasetDetail (DSFamilyId)

This operation allows you to request the optional metadata associated with your requested dataset. The information returned is broadly similar to that displayed on the NeSS website, but slightly changed for machine to machine usage.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetDatasetDetail?DSFamilyId=1163

*Give me information about the Fire Incidents dataset.*

## 4.6 GetDatasets (SubjectId, [AreaId])

This operation enables you to obtain the dataset families associated with your requested subject. The SubjectId will have been obtained from a getSubjects() call. An AreaId is optional, and if supplied, only datasets which have data for this area will be returned.

This is currently the same as the advanced operation getDatasetFamilies.
**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetDatasets?SubjectId=10&AreaId=276980

*Give me a list of all datasets with subject 'Indexes of Deprivation' which have data for Fareham LA (GPH).*

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## 4.7 GetSubjects ()

This operation enables you to obtain the available subjects, but not their associated dataset families (for which you use GetDatasetFamilies). This differs from GetSubjectTree which returns all dataset families for all subjects.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetSubjects?

*Give me a list of all subjects on the NeSS Database*

## 4.8 GetSubjectDetail (SubjectId)

This operation allows you to obtain the metadata associated with your requested subject. Dataset families are not returned.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetSubjectDetail?SubjectId=10

*Give me the description for subject 10 (Indexes of Deprivation)*

## 4.9 GetSubjectTree ()

This operation has no parameters and returns a nested tree of subjects by datasets with supported date ranges for each dataset.

The datasets listed are dataset families each of which has one or more dataset instances, (see getVariableFamilies for a fuller description of families and instances) each one of these being shown by a DateRange element. Often the DateRange is a single day on which the data was collected.

It was originally intended this would be an advanced operation, partly because it takes a little while to run so is more suited to offline storage. However, testing it with e4x in Adobe Flex the one-shot tree proved to be very useful - you can put the result into an Arraycollection and dynamically drive selection components without repeated web service calls. Note that it runs a lot quicker in 2.0 than 1.2 (no SSL encryption).

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetSubjectTree?

*Please retrieve the entire tree structure of datasets within subject.*

## 4.10 GetVariableDetail (VarFamilyId)

This operation allows you to obtain the metadata associated with your requested variable. The information returned is broadly similar to that displayed on the NeSS website, but slightly changed for machine to machine usage.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetVariableDetail?VarFamilyId=125

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*Give me the all the information held for variable 125 (Hours Worked by Females)*

## 4.11 GetVariables (DSFamilyId, [DateRange])

This operation gives you the variable family ids for a dataset.
In the NeSS Datastore, we use the concept of families and instances. A dataset that is collected annually would have an instance for each year. So an example of a family would be 'Unemployment Statistics' and its instances 'Unemployment Statistics 2000', 'Unemployment Statistics 2001' etc.

Within each dataset, we call the constituent items 'variables' (or 'TOPIC' in LGDX). In our example the variable families might be 'Unemployed females', 'Unemployed males' and 'Unemployed IT developers'. These families would have corresponding variable instances under all of the dataset instances, except where a variable is added or removed over time. For example in 2005 ONS decided to no longer count unemployed IT developers. For each variable, we return its id, name, measurement unit and statistical unit. A measurement unit is a count, rate, percentage etc. A statistical unit is a person, household etc. So 'percentage of households with broadband' would have the measurement unit 'percentage', and statistical unit 'household'.

The response includes the dates for which the variable has been used, so it is possible to filter out variables that are not populated at the date of interest. A date range can also be specified in the call, so that only variables extant within that date range will be returned.

This is currently the same as the advanced operation getVariableFamilies

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetVariables?DateRange=2001-01-01:2010-12-31&DSFamilyId=1893

*Give me a list of variables for dataset 1893, extant between 2001 and 2010.*

{NEXT TWO OPERATIONS ARE DELIVERY}

## 4.12 GetTables (Areas, [Datasets], [Variables], [TimePeriod], [OutputFormat], [OutputVersion], [GroupByDataset])

This operation is a simplified version of getDataCube which it encapsulates. As well as making it easier for client applications to construct the request, this simplification is an essential precursor to offering a RESTful version of the service.

A list of one or more area ids must be supplied (comma delimited)

All other parameters are optional, but the DataCubeQuery validator will complain unless one or both of datasets and variables are supplied. If datasets but not variables are supplied, it is assumed that all the variables are wanted for these datasets.

If no time period is given, then the latest data is returned, only the variables still in use by the latest version of the dataset are displayed, and no discontinued ones.

OutputFormat is no longer ignored. The default is "LGDX" which will be assumed if it is omitted. The other options are "SDMX" and "RDF" in which case the output will be converted to SDMX or RDF format as appropriate. Both of these output formats have

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provisional status for 1.2, and will be final in 2.0. RDF currently cannot be generated for pick and mix requests.

**Sample Calls:**

http://neighbourhood.statistics.gov.uk/NDE2/Deli/getTables?Areas=308058&Variables=6845,6846,6847,6848,6849,6850,6851,6852&GroupByDataset=Yes

*Give me selected Index of Deprivation data for St Albans 001A*

## 4.13 GetChildAreaTables (ParentArea, [LevelTypeId], [Datasets], [Variables], [TimePeriod], [OutputFormat], [OutputVersion], [GroupByDataset])

This operation is a simplified version of getDataCube which it encapsulates. As well as making it easier for client applications to construct the request, this simplification is an essential precursor to offering a RESTful version of the service.

GetChildAreaTables works the same way as getTables, except that instead of a list of areas, a single parent area id is supplied. If no level type id is supplied, it is assumed that the direct children are required (uses getAreaChildren to fill out the getDataCube request). If a level type id is specified, you can explicitly state which small area is to be used (e.g LSOAs in a LA) - getAreaAtLevel is used to build the getDataCube request.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Deli/getChildAreaTables?ParentAreaId=276980&LevelTypeId=141&Datasets=67

*Give me the complete census population dataset for all the LSOAs in Fareham*

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# 5. Advanced Operations

The definitions below are unchanged from the current service.

## 5.1 GetAreaAtLevel (AreaId, LevelTypeId)

This operation gives you child areas for a known area id. This AreaId is internal to the NeSS datastore and must have been previously obtained via other discovery calls. Your application needs a list of level types (see GetLevelTypes). In the example in Annex A, the start AreaId 276704 is West Midlands region (in the NeSS Geography hierarchy), and we are asking for type 12 children. Type 12 is County. So in effect we are asking 'Give me all the counties in West Midlands'. Use getAreaDetail to get more information on these areas (if required).

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetAreaAtLevel?LevelTypeId=141&AreaId=276980

## 5.2 GetAreaComparators (AreaId)

This operation gives you the higher level areas which contain your chosen area, which are considered useful for comparison purposes. For example, the comparator areas of an Output Area might be the local authority, the region (if within England) and the country.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetAreaComparators?AreaId=276980

## 5.3 GetCompatibleSubjects (AreaId)

This operation retrieves the available subjects, without dataset families. With each subject, however, a count is returned of dataset families that are compatible with the supplied area.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetCompatibleSubjects?AreaId=276980

## 5.4 GetDatasetFamilies (SubjectId, [AreaId])

This operation enables you to obtain the dataset families associated with your requested subject. The SubjectId will have been obtained from a getSubjects() call. An AreaId is optional, and if supplied, only datasets which have data for this area will be returned.

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**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetDatasetFamilies?SubjectId=7&AreaId=276980

## 5.5 GetHierarchies ()

This operation is called without parameters and yields a list of all the Geographic Hierarchies in the NeSS datastore. This list is not static, new hierarchies are added from time to time. For an explanation of UK geographic hierarchies go to:
http://www.statistics.gov.uk/geography/beginners_guide.asp

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetHierarchies?

## 5.6 GetHierarchyDetail (HierarchyId)

This operation allows you to obtain the metadata associated with the hierarchy of your requested area, including the root area for the hierarchy. The root area id is useful as a start point for GetAreaChildren(AreaId).

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetHierarchyDetail?HierarchyId=17

## 5.7 GetLevelTypes ()

This operation is called without parameters and returns a list of current level types on the NeSS datastore. A level type is a general type of area about which data is held, for example a Local authority (LA) – a level type can exist in more than one hierarchy, but there is only one level type per level in each hierarchy.

In the sample response in Annex A, a comment has been added to tell you what the letters stand for, and those types for which large amounts of data are held are shown in bold type.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetLevelTypes?

## 5.8 GetLevelTypesByHierarchy (HierarchyId)

This operation is called with one parameter, the HierarchyId (the operation getHierarchies gives you a list of these). It returns a list of current level types on the NeSS datastore belonging to the specified hierarchy. The list is ordered from largest to smallest area.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetLevelTypesByHierarchy?HierarchyId=18

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## 5.9 GetModifiedDatasetFamilies (Date, [SubjectId, [AreaId]])

This operation retrieves dataset families that have been updated since the supplied date. If a subject is supplied, only those datasets associated with the subject are considered. If an area is supplied, only those datasets compatible with the area are considered.

Note that it is not currently possible to detect deletions (except by comparing an old and new response).

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetLevelTypesByHierarchy?HierarchyId=2

## 5.10 GetVariableFamilies (DSFamilyId, [DateRange])

This operation gives you the variable family ids for a dataset.
In the NeSS Datastore, we use the concept of families and instances. A dataset that is collected annually would have an instance for each year. So an example of a family would be 'Unemployment Statistics' and its instances 'Unemployment Statistics 2000', 'Unemployment Statistics 2001' etc.

Within each dataset, we call the constituent items 'variables' (or 'TOPIC' in LGDX). In our example the variable families might be 'Unemployed females', 'Unemployed males' and 'Unemployed IT developers'. These families would have corresponding variable instances under all of the dataset instances, except where a variable is added or removed over time. For example in 2005 ONS decided to no longer count unemployed IT developers. For each variable, we return its id, name, measurement unit and statistical unit. A measurement unit is a count, rate, percentage etc. A statistical unit is a person, household etc. So 'percentage of households with broadband' would have the measurement unit 'percentage', and statistical unit 'household'.

The response includes the dates for which the variable has been used, so it is possible to filter out variables that are not populated at the date of interest. A date range can also be specified in the call, so that only variables extant within that date range will be returned.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/GetVariableFamilies?DateRange=2001-01-01:2010-12-31&DSFamilyId=1893

## 5.11 SearchAreaByCode (Code, [HierarchyId], [LevelTypeId])

The operation getAreaDetail returns the SNAC code of an area (as ExtCode). This allows you to convert from a NeSS internal area ID to a SNAC code. The SearchAreaByCodeElement makes the reverse coversion possible - for example a GIS package might want to use the SNAC code as a key to create an information pop-up about an area.

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Because the NeSS database holds multiple hierarchies, there will usually be more than one AreaId per SNAC code. When a new administrative hierarchy is issued, if a ward's boundary has changed it is allocated a new SNAC code. If the boundary has not changed it has the same SNAC code but still gets a new AreaId.
This operation can be called with just a code, in which case a list of areas will be returned. If a hierarchyId is supplied it is almost certain that a single area only will be found. If the LevelTypeId is also supplied there can only be one result. Supplying a LevelTypeId and no HiearchyId is also an option and will give multiple results.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchAreaByCode?Code=24UE&LevelTypeId=13&HierarchyId=2

## 5.12 SearchAreaByNameHierarchy (AreaNamePart, [HierarchyId])

This operation allows you to search for an area in a particular hierarchy. The parameters are a string which is all or part of the matching area's name, and the hierarchy id (obtained from getHierarchies). Some strings such as 'West' could give a large number of results. Large result sets can also be obtained from the NeSS Geography Hierarchy as LSOAs are named Fareham 001A, Fareham 001B etc. If no match is found for a valid area string, an empty response is returned.

The area is sent with a 'falls within' area attached. This is the area that the rules table thinks is the most suitable parent or grandparent area, and will not necessarily be in the same hierarchy. The falls within area can be nil.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchAreaByNameHierarchy?HierarchyId=7&AreaNamePart=Itchen

## 5.13 SearchAreaByNameLevelType (AreaNamePart, LevelTypeId)

This operation allows you to search for an area with a particular level type. You can get similar areas from multiple hierarchies (e.g. 2003 and 2004 version of the Admin hierarchy). The parameters are the level type id (from getLevelTypes) and a string which is all or part of the matching area's name. Some strings such as 'South' could give a large number of results. If no match is found for a valid area string, an empty response is returned.

The area is sent with a 'falls within' area attached. This is the area that the rules table thinks is the most suitable parent or grandparent area, and will not necessarily be in the same hierarchy. The falls within area can be nil.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchAreaByNameLevelType?LevelTypeId=14&AreaNamePart=Castle

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## 5.14 SearchAreaByPostcodeHierarchy (Postcode, [HierarchyId])

This operation allows you to search for an area in a particular hierarchy. The parameters are a full postcode, and the hierarchy id (obtained from getHierarchies). The result is a 'vertical stack' of areas each one being the parent of the previous one.

If no match is found for a valid postcode string, an empty response is returned.

The area is sent with a 'falls within' area attached. This is the area that the rules table thinks is the most suitable parent or grandparent area, and will not necessarily be in the same hierarchy. The falls within area can be nil.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchAreaByNameLevelType?LevelTypeId=27&AreaNamePart=Itchen

## 5.15 SearchAreaByPostcodeLevelType (Postcode, LevelTypeId)

This operation allows you to search for an area with a particular level type. You can get similar areas from multiple hierarchies (e.g. 2003 and 2004 version of the Admin hierarchy). The parameters are the level type id (from getLevelTypes) and a postcode (complete).

If no match is found for a valid postcode string, an empty response is returned.
The area is sent with a 'falls within' area attached. This is the area that the rules table thinks is the most suitable parent or grandparent area, and will not necessarily be in the same hierarchy. The falls within area can be nil.

Note that hierarchies with incomplete coverage, such as parishes, do affect the results. Search by Name for Fareham (LevelType LA) and you get a match in hierarchies 2,3,4,9 and 11. Search by Postcode for PO155RR (LevelType LA) and you get a match in hierarchies 2,3,4 and 11.

The reason is that although Fareham exists as an LA in the Parish Hierarchy (9), there are no parishes in Fareham so this 'breaks the chain'.

Search by Postcode is implemented as

1) Find Postcode
2) Go from Postcode to its Output Area in the NeSS Geography Hierarchy
3) Link from this OA to the smallest area in the Parish Hierarchy (parish)
4) Work up the Parish Hierarchy until you find an object at LevelType LA.

The result is that the LA can only be found if the postcode is within a real parish.
**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchAreaByPostcodeLevelType?LevelTypeId=20&Postcode=PO155RR

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## 5.16 SearchSByAByName (AreaNamePart, LevelTypeId)

The two SByA operations simulate the behaviour of the Statistics By Area facility on the NeSS web site. In order to speed up and simplify the area selection process, a number of potential user choices are automated. A table of rules is used to make these choices. One principal choice is that for each potentially matching area, a selection is made of the 'most appropriate' hierarchy (taking into account time and boundary/name changes). This saves selecting between e.g. 1998, 2003, 2004 Fareham Ward as the system chooses the 2004 Fareham Ward as 'most appropriate'.

This operation allows you to supply a name (or part of a name) and all matching areas with the specified level type are returned. In the example in Annex A we are searching for LAs (type 13) with the characters 'york' as part of the name. If no match is found for a valid area string, an empty response is returned.

The area is sent with a 'falls within' area attached. This is the area that the rules table thinks is the most suitable parent or grandparent area, and will not necessarily be in the same hierarchy. The falls within area can be nil.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchSByAByName?LevelTypeId=14&AreaNamePart=Upper

## 5.17 SearchSByAByPostcode (Postcode,[HierarchyId])

The two SByA operations simulate the behaviour of the Statistics By Area facility on the NeSS web site. In order to speed up and simplify the area selection process, a number of potential user choices are automated. A table of rules is used to make these choices. A selection is made of the 'most appropriate' hierarchy (taking into account time and boundary/name changes).

This operation allows you to supply a postcode and a single area, with the specified level type, is returned. In Annex A we are asking which LA (type 13) postcode PO175JE is in. If no match is found for a valid postcode string, an empty response is returned.

The area is sent with a 'falls within' area attached. This is the area that the rules table thinks is the most suitable parent or grandparent area, and will not necessarily be in the same hierarchy. The falls within area can be nil.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchSByAByPostcode?LevelTypeId=180&Postcode=PO155RR

## 5.18 SearchDatasetByMetadata (Metadata)

This operation, allows you to perform a text search to find matching datasets. The string is compared to:
- dataset titles
- keywords held against the dataset
- metadata held for the dataset
- the titles of variables belonging to the dataset

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- metadata held for variables belonging to the dataset

The results are always dataset families. There is currently no facilitiy to search for variables this way.

**Sample Calls:**
http://neighbourhood.statistics.gov.uk/NDE2/Disco/SearchDatasetByMetadata?Metadata=pregnancy

{NEXT OPERATION IS DELIVERY}

## 5.19 GetDataCube () POST only

This is the original query inherited from the original “Cafeteria” prototype. It was designed for flexibility, being able to cope with data in any format from multiple repositories. It is likely that most requests can be achieved using the simpler GetTables and GetChildAreaTables operations, but getDataCube is still available if needed and will continue to be supported for backward compatibility.

On the query element, if you set the *type* attribute to “SDMX” the output will be converted to SDMX format instead of LGDX. Similarly, setting the *type* attribute to “RDF” the output will be converted to RDF format instead of LGDX.

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# 6. Appendix A - Reference

## 6.1 Hierarchies

2 NeSS Geography Hierarchy
3 1998 Administrative Hierarchy
4 2003 Administrative Hierarchy
7 2003 Electoral Hierarchy
8 2003 Health Hierarchy
9 2003 Parish Hierarchy
10 2003 Education Hierarchy
11 2004 Administrative Hierarchy
12 New Deal for Communities (Best fit)
14 Provisional Parliamentary Constituencies 2007
15 2006 Health Hierarchy
16 2005 Administrative Hierarchy
17 2006 Administrative Hierarchy
18 2007 Administrative Hierarchy

## 6.2 Subjects

1 Access to Services
2 Community Well-being / Social Environment
3 Crime and Safety
4 Economic Deprivation
5 Education, Skills and Training
6 Health and Care
7 Housing
8 Physical Environment
9 Work Deprivation
10 Indices of Deprivation and Classification
13 People and Society: Population and Migration
14 People and Society: Income and Lifestyles
15 2001 Census: Key Statistics
16 2001 Census: Census Area Statistics
46 Indicators
47 Access to Services
48 Community Well-being / Social Environment
49 Crime and Safety
50 Economic Deprivation
51 Education, Skills and Training
52 Health and Care
53 Housing
54 Physical Environment
55 Work Deprivation
56 Cross Cutting Indicators
57 People and Society

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## 6.3 Level Types

| Level Id | Level Code | Level Name |
|---|---|---|
| 164 | COM | Community |
| 10 | CTRY | Country |
| 12 | CTY | County |
| **180** | **EA** | **Education Area** |
| 9 | EW | England and Wales |
| 96 | FCTY | Former County |
| 21 | GAZ | Gazetteer |
| 8 | GB | Great Britain |
| 11 | GOR | Government Office Region |
| 19 | HA | Health Authority |
| **13** | **LA** | **Local Authority** |
| **141** | **LSOA** | **Lower Layer Super Output Area** |
| **140** | **MSOA** | **Middle Layer Super Output Area** |
| **201** | **NDC** | **New Deal for Community** |
| 17 | NP | National Park |
| **15** | **OA** | **Output Area** |
| **16** | **P** | **Parish** |
| 25 | PA | Postcode Area |
| 22 | PCD | Postcode |
| **20** | **PCO** | **Primary Care Organisation** |
| 24 | PD | Postcode District |
| 23 | PS | Postcode Sector |
| 97 | RO | Regional Office |
| **81** | **SHA** | **Strategic Health Authority** |
| 143 | SN | Statistical Neighbourhood |
| 144 | SPR | Scottish Parliamentary Region |
| 28 | U | Urban Area |
| 7 | UK | England Scotland Wales Northern Ireland |
| 29 | USD | Urban Subdivisions |
| 153 | USOA | Upper Layer Super Output Area |
| **14** | **WARD** | **Ward** |
| **27** | **WPC** | **Westminster Parliamentary Constituency** |

Entries in bold are “Stats by Area” types (as used on NeSS web site home page).

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## 6.4 Measurement Units

| Measurement Unit Id | Measurement Unit Code | Measurement Unit Name |
|---|---|---|
| 1 | | Count |
| 2 | % | Percentage |
| 3 | | Rate |
| 4 | | Rate per 1000 |
| 5 | | Rate per 10000 |
| 8 | | Rank |
| 9 | £ | Pounds Sterling |
| 10 | £ (00s) | Pounds Sterling (hundreds) |
| 11 | £k | Pounds Sterling (thousands) |
| 12 | £M | Pounds Sterling (millions) |
| 13 | | Score |
| 14 | Y | Years |
| 15 | D | Days |
| 16 | H | Hours |
| 17 | min | Minutes |
| 18 | s | Seconds |
| 19 | km | Kilometres |
| 20 | mi | Miles |
| 21 | m | Metres |
| 22 | m2 | Metres squared |
| 23 | ha | Hectares |
| 24 | ac | Acres |
| 25 | | None (Reliability Indicator) |
| 26 | m2 (000s) | Metres squared (thousands) |
| 27 | | Ratio |
| 28 | | Classification |
| 36 | | Rate per 1000 population |
| 37 | | Rate per 1000 households |
| 38 | | Count (thousands) |
| 39 | | Hectares squared |
| 40 | m2 | Square metres |
| 41 | | Square metres (thousands) |
| 42 | | Ranked Group |
| 43 | | Percentage Points |

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## 6.5 Statistical Units

| Statistical Unit Id | Statistical Unit name | | Statistical Unit Id | Statistical Unit name |
|---|---|---|---|---|
| 1 | Persons | | 19 | None (Reliability Indicator) |
| 2 | Households | | 20 | Vehicles |
| 3 | Businesses | | 21 | Pollutant |
| 4 | Enterprise Units | | 22 | Premises |
| 5 | Offences | | 23 | Live Births |
| 6 | Household Spaces | | 24 | Claims |
| 7 | Areas | | 25 | Convictions |
| 8 | Episodes | | 26 | Lettings |
| 9 | Sites | | 27 | Days |
| 10 | Communal Establishments | | 28 | Pupil Sessions |
| 11 | Families | | 29 | Pupil Half Days |
| 12 | Dwellings | | 30 | Rent |
| 13 | Incidents | | 31 | Admission Episodes |
| 14 | Cases | | 32 | Enrolments |
| 15 | Users | | 33 | Enterprises |
| 16 | Rooms | | 34 | Kilowatt Hours |
| 17 | Local Units | | 35 | Meter Points |
| 18 | Hereditament | | | |

## 6.6 Periodicities

| Periodicity Id | Periodicity Code | Periodicity Name |
|---|---|---|
| 51 | DT | Date |
| 54 | M | Month |
| 55 | CY | Calendar Year |
| 57 | FY | Financial Year |
| 129 | CQ | Calendar Quarter |
| 130 | CHY | Calendar Half Year |
| 131 | FHY | Financial Half Year |
| 175 | RQ | Rolling Quarter |
| 176 | RY | Rolling Year |
| 223 | 2YRP | 2 Year Rolling Period |
| 224 | 3YRP | 3 Year Rolling Period |
| 248 | AY | Academic Year |

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